

SEEDS OF SUCCESS:

The National Native Seed Collection Program in the United States

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The U.S. national native seed collection program, Seeds of Success (SOS), has been collecting and banking native seed from wild populations since 2001 to restore the American landscape. The mission of SOS is to collect and conserve geographically appropriate native plant materials for restoration projects.

Seeds of Success is the foundation of the Native Plant Materials Development Program, which began with a directive from Congress to the Bureau of Land Management (BLM), the SOS National Coordinating Office, to establish a

long-term program to develop native plant materials for the restoration and rehabilitation of native plant communities on federally managed lands. SOS was established by the BLM through a partnership with Kew and is linked to the Millennium Seed Bank project (see page 19). The SOS is a partnership of federal government agencies and non-governmental organizations, all with shared interests in collecting, conserving, and developing native seed. This work cannot be accomplished without the botanic garden community's involvement.

Native plant materials are in greater demand now than ever before. In 2007, there were record-setting weather events in every part of the United States. The South and the Atlantic Coast experienced withering drought, the Midwest was hit by tornadoes, and the West was scorched by scores of wildfires. The fire season was especially difficult for the BLM; records for acres burned were set in Utah, Nevada, and Idaho. In addition to increasing wildfires, native plant communities are experiencing pressures from invasive plants, urban expansion, ever-increasing recreational use, and demand for energy resources. Yet these native plant communities are essential for sustainable economic prosperity and the quality of life that comes from public lands. The pressures are particularly acute in the growing wildland-urban interface.

With almost one-third of the United States under federal management, there is a critical need to develop native plant materials. However, it is not only the federal land-managing agencies, such as BLM, USDA Forest Service, or U.S. Fish and Wildlife Service, that require native seed, but also state and local agencies as well as non-governmental organizations engaged in land conservation and restoration. The current commercial seed industry does not provide the diversity or quantity of plants required for restoration. A reliable, sustainable, and ecologically appropriate source of native seeds is essential for meeting the agencies' needs and the public's needs. These can best be met within a national framework such as SOS for the management and conservation of the nation's seed resources.

In one example of a successful partnership, SOS has been working with the Great Basin Native Plant Selection and Increase Project to collect seeds for deposit in the Seeds of Success National Collection, for plant selection, and to increase seed stocks. Research is being conducted on the development of strategies and equipment for reestablishing diverse native communities. Growers can request seed through the Utah Crop Improvement Association. The bulk seed produced by the growers is sold to federal land-managing agencies or private entities for restoration



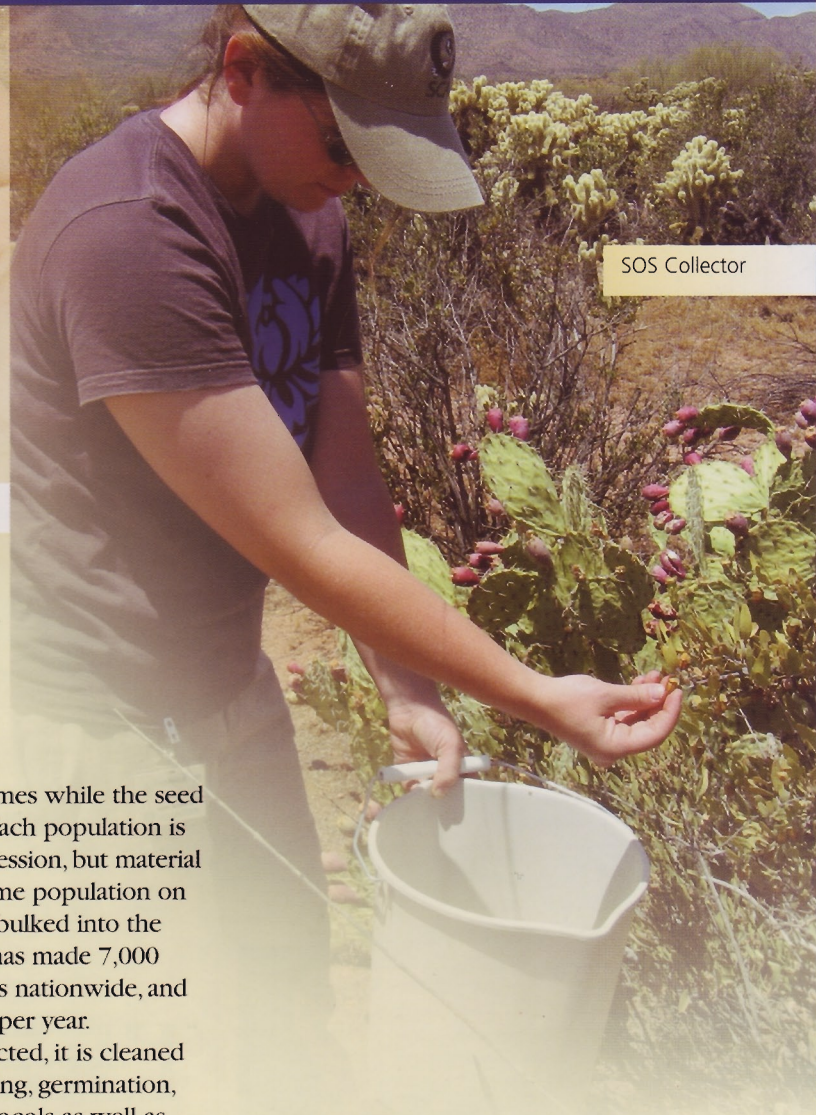
National Plant Germplasm System
Pullman, WA-SOS Storage



SOS collectors evaluating a site.



Simmondsia chinensis fruit



SOS Collector

plantings. Native seed developed through this program has been successfully used for restoration projects in Oregon, Washington, California, Nevada, Idaho, and Utah.

Currently, SOS has 50 teams across the United States collecting species of priority restoration value. Collecting teams are based at BLM, Fish and Wildlife Service offices and botanic gardens. SOS botanic garden partners currently include the Chicago Botanic Garden, Lady Bird Johnson Wildflower Center, New England Wild Flower Society, North Carolina Botanical Garden, and Zoological Society of San Diego. In addition, BLM contracts with the Center for Plant Conservation for the Arboretum at Flagstaff, Berry Botanic Garden, Desert Botanical Garden, Red Butte Garden, University of California Berkeley Botanic Garden, and University of Washington Center for Urban Horticulture to collect seed on BLM-managed land.


A robust collecting protocol and training program were developed to facilitate the more than 300 collectors working on teams across the United States. Ten thousand viable seeds from one population of each priority native species are collected for the Millennium Seed Bank. Additional populations from across the species' range are sampled for native plant materials research and development. No more than 20 percent of the viable seed is harvested from any one population throughout the season. To capture the most genetic diversity, collecting teams try to revisit target

populations several times while the seed is about to disperse. Each population is kept as a separate accession, but material collected from the same population on different days can be bulked into the same accession. SOS has made 7,000 native seed collections nationwide, and averages about 1,000 per year.

After seed is collected, it is cleaned and processed. Cleaning, germination, and propagation protocols as well as seed transfer zones have not yet been established for many of the high-priority restoration species; however, where seed transfer guidelines exist they are being followed. (A seed transfer zone is a mapped area with fixed boundaries within which seeds or other plant materials of a native species can be transferred with minimal risk of maladaptation. Seed transfer guidelines are recommendations on how far native seeds should be transferred from their point of origin.)

A portion of each SOS collection goes not only to the Millennium Seed Bank, but also to the USDA Agricultural Research Service's National Plant Germplasm System for long-term storage. However, most of the seed is used by researchers for native plant materials development. SOS is providing the well-documented, sustainably harvested seed these researchers need to begin the process of developing

reliable native seed crops so that more native plants for restoration will be commercially available.

In June 2008, at the APGA annual conference in Pasadena, SOS botanic garden partners signed a Memorandum of Understanding with the BLM formalizing their partnership. This will enable SOS to extend seed banking far beyond the 7,000 native seed collections made so far. With the help of the botanic garden community, native plants will be making their way back into their habitats to protect and restore the ecological integrity of the American Landscape. 

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